Claims

1. Method for the detection of an analyte in a sample comprising the steps:

   (a) providing a solid phase which comprises a non-porous support and at least two spatially separate test areas, the test areas each containing different immobilized analyte-specific receptors,

   (b) contacting the sample with the solid phase and with at least one free analyte-specific receptor which carries a signal generating group or is capable of binding to a signal generating group, and

   (c) detecting the presence or/and the amount of the analyte by determining the signal generating group on the test areas.

2. Method as claimed in claim 1,
   wherein
   the analyte to be detected is a homogeneous or heterogeneous population.

3. Method as claimed in claim 1 or 2,
   wherein
   the analyte is a heterogeneous antibody population, an antigen mixture or a mixture of antigens and antibodies that may be different.

4. Method as claimed in one of the previous claims,
   wherein
   the test areas have a diameter of 0.01 to 1 mm.

5. Method as claimed in one of the previous claims, **wherein** the solid phase is prepared by the separate, direct specific application of the different analyte-specific receptors on the spatially separate test areas.

6. Method as claimed in one of the previous claims, **wherein** the coating on the test areas is in each case composed of a single type of binding molecule.

7. Method as claimed in one of the previous claims, **wherein** a solid phase is used which additionally comprises at least one control area which contains no analyte-specific receptor.

8. Method as claimed in one of the previous claims, **wherein** a universal detection reagent and in particular labelled latex particles are used to detect complexes formed from the analyte and reagents that bind thereto.

9. Solid phase for the detection of an analyte in a sample, **wherein** it comprises a non-porous support and at least two spatially separate test areas, the test areas each containing different reagents which bind specifically to the analyte to be determined.

10. Solid phase as claimed in claim 9,
    wherein
    the test areas each contain different reagents
    which bind to different epitopes or/and subtypes of
    the analyte or/and to different analyte types.

11. Solid phase as claimed in claim 9 or 10,
    wherein
    the non-porous support is made of polystyrene.

12. Solid phase as claimed in one of the claims 9 to
    11,
    wherein
    the test areas have a diameter of 0.01 to 1 mm.

13. Use of a solid phase as claimed in one of the
    claims 9 to 12 in an immunoassay.

14. Test kit for the detection of an analyte in a
    sample comprising a solid phase as claimed in one
    of the claims 9 to 12 as well as labelled detection
    reagents.

15. Test kit as claimed in claim 14,
    wherein
    it contains labelled latex particles as the
    universal detection reagent.

16. Method for the simultaneous determination of an
    antigen and of an antibody that is specifically
    directed against this antigen in a sample
    comprising the steps:
    (a) providing a solid phase on which an immobilized

receptor that can bind to the antigen to be determined is applied in a first test area and an immobilized receptor that can bind to the antibody to be determined is applied in a second test area which is spatially separated therefrom,

(b) contacting the sample with the solid phase and with a free analyte-specific receptor which carries a signal generating group or is capable of binding to a signal generating group and

(c) detecting the presence or/and the amount of the antigen and of the antibody by determining the signal generating group on the solid phase

17. Method as claimed in claim 16,
wherein
the antigen is detected using a sandwich test.

18. Method as claimed in one of the claims 16 or 17,
wherein
the antibody is detected using a back titration method.

19. Method as claimed in claim 16 or 17,
wherein
the antibody is detected using a bridge method.

20. Method as claimed in one of the claims 16 or 17,
wherein
the antibody is detected using an indirect test format.

21. Method as claimed in one of the claims 16 to 20,
    wherein
    the coating of the first test area capable of
    binding is formed from immobilized antibodies which
    are specific for an epitope of the antigen to be
    detected.

22. Method as claimed in claim 21,
    wherein
    antibodies which are specific for different
    subtypes of the antigen to be detected, are applied
    in separate test areas.

23. Method as claimed in claim 21 or 22,
    wherein
    the antibody is selected from viral antibodies, in
    particular anti-HIV I antibodies, anti-HIV II
    antibodies, anti-HBV antibodies and anti-HCV
    antibodies.

24. Method as claimed in one of the claims 16 to 23,
    wherein
    the coating of the second test area capable of
    binding is composed of antigens which are specific
    for the antibodies to be detected.

25. Method as claimed in claim 24,
    wherein
    the antigens are selected from the group comprising
    HIV I, HIV II, HBV and HCV.

26. Method as claimed in one of the claims 16 to 25,
    wherein
    the antigen to be determined is HIV p24 and the
    antibody to be determined is anti-p24.

27. Method as claimed in one of the claims 16 to 26,
    wherein
    a non-porous solid phase is used.

28. Method as claimed in one of the claims 16 to 27,
    wherein
    the detection is carried out using labelled
    antibodies which are directed against the analyte.

29. Method as claimed in claim 28,
    wherein
    the label is selected from fluorescent groups,
    chemiluminescent groups, radioactive labels, enzyme
    labels, coloured labels and sol particles.

30. Method as claimed in one of the claims 16 to 29,
    wherein
    the detection is carried out using a universal
    detection reagent in particular labelled latex
    particles.

31. Method as claimed in one of the claims 16 to 30,
    wherein
    the solid phase is prepared by direct, separate
    application of the specific coatings capable of
    binding to the individual test areas.

32. Method as claimed in one of the claims 16 to 31,
    wherein
    the coating on the test areas is in each case
    composed of a single type of molecule that is
    capable of binding.

33. Solid phase for the simultaneous determination of
    an antigen and of an antibody directed specifically
    against this antigen in a sample comprising at
    least a first test area and at least a second test
    area,
    wherein
    the first test area has a coating that can bind
    specifically to an antigen and the second test area
    has a coating which can bind specifically with an
    antibody directed against the antigen.

34. Solid phase as claimed in claim 33,
    wherein
    the coatings are homogeneous and each contains only
    a single type of reagent that is capable of
    binding.

35. Solid phase as claimed in claim 33 or 34,
    wherein
    the test areas are applied on a non-porous support.

36. Solid phase as claimed in claim 35,
    wherein
    the non-porous support is made of polystyrene.

37. Solid phase as claimed in one of the claims 33 to 36,

    wherein

    the individual test areas have a diameter of 0.01 to 1 mm.

38. Use of a solid phase as claimed in one of the claims 33 to 37 in an immunoassay for the simultaneous detection of an antigen and of an antibody directed specifically against this antigen.

39. Test kit for the simultaneous determination of an antigen and of an antibody directed specifically against this antigen comprising a solid phase as claimed in one of the claims 33 to 37 and labelled detection reagents.

40. Test kit as claimed in claim 39,

    wherein

    it contains a universal detection reagent.

41. Method for the detection of an analyte in a sample comprising the steps:

    (a) providing a solid phase which comprises a support and at least two spatially separate test areas, the test areas each containing different immobilized analyte-specific receptors,

    (b) contacting the sample with the solid phase and with at least one free analyte-specific receptor which carries a signal generating group or is capable of binding to a signal generating group, and

(c)   detecting the presence or/and the amount of the
analyte by determining the signal generating
group on the test areas whereby a signal is
classified as positive that is above a
predetermined test-area-specific threshold value
and is classified as negative when it is below a
predetermined test-area-specific threshold
value.

42.   Method as claimed in claim 41,
wherein
the cut-off values are each determined individually
for a test area.

43.   Method as claimed in claim 41 or 42,
wherein
the cut-off values are set differently for at least
2 test areas.